

State of New Jersey

Department of Environmental Protection Air Quality Permitting

General Permit (GP-018)

For

Boiler(s) and/or Heater(s) Each Less Than 10 MMBTU/hr

This General Permit allows for the construction, installation, reconstruction, modification and operation of:

- ◆ A single boiler and/or heater with a maximum rated heat input to the burning chamber of less than 10 million BTU/hr, or
- ◆ Multiple boilers and/or heaters, each with a maximum rated heat input to the burning chamber of less than 10 million BTU/hr.

The potential-to-emit (PTE) for the equipment covered under this General Permit shall be established based on the General Permit Option Number selected by the Permittee on the Registration Form.

Each facility may possess only one GP-018 at any time. If a facility wants to add a new source, replace or make changes to an existing source that's already registered under GP-018, then a new General Permit registration is required. This new General Permit registration will supersede the existing General Permit.

This General Permit is applicable to boiler(s) and/or heater(s) burning only the following commercial fuels: Natural Gas, No. 2 Fuel Oil*, Propane and/or Kerosene.

All boiler(s) and indirect fired process heaters registered under this General Permit are subject to the requirements of N.J.A.C. 7:27-19 Annual Adjustment of the Combustion Process.

***Note: No. 2 fuel oil can be a blend of up to 5% by volume bioadditives.**

I. DEFINITIONS

The terms used in this General Permit shall have the meanings given to them in N.J.A.C. 7:27 et seq. or as listed below:

“Boiler” means fuel burning equipment used to produce hot water or steam, with a maximum rated heat input to the burning chamber of less than 10 MMBTU/hr.

Direct-fired process heater" means any process heater in which the combustion gases mix with and exhaust to the atmosphere from the same stack(s), vent(s), etc. with gases originating with the process or material being processed.

“Fuel Totalizer” means a dedicated measuring and/or monitoring device that totalizes, or sums up, the amount of fuel consumed in a time period. Note: Other combustion sources (including insignificant sources) may be included on a fuel totalizer, but will count towards the amount of fuel consumed and/or any fuel limits a facility may have.

“Heater” means a space heater and/or indirect fired process heater with a maximum rated heat input to the burning chamber of less than 10 MMBTU/hr.

Indirect-fired process heater" means any process heater in which the combustion gases is not mixed with and exhaust to the atmosphere from the same stack(s), vent(s), etc. with gases originating with the process or material being processed.

“Insignificant Source” means any equipment or source operation that does not need a permit and certificate under N.J.A.C. 7:27-8.2.

“Internal combustion engine” means either a reciprocating engine or a combustion turbine in which power, produced by heat and/or pressure from combustion is converted to mechanical work.

“MMBTU/hr” means a unit of heat input rate shown as millions of British Thermal Units per hour.

“Maximum Rated Heat Input” the maximum steady-state fuel firing rate of the burner, measured in BTU per hour of gross heat input, as determined by the manufacturer’s design rating of the burner (the fuel – burning device.)

“Space heater” means a heating appliance used for warming the air of a designated area.

II. AUTHORITY

This General Permit is issued under the authority of N.J.S.A. 26:2C-9.2. This General Permit shall allow for inspections and evaluations to assure conformance with all provisions of N.J.A.C. 7:27 et seq. An opportunity for public comment was provided on September 2, 2008. _

III. APPLICABILITY

This General Permit allows for the construction, installation, reconstruction, modification and operation of:

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- ◆ Multiple boilers and/or heaters, each with a maximum rated heat input to the burning chamber of less than 10 million BTU/hr.

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This General Permit is applicable to boiler(s) and/or heater(s) burning only the following commercial fuels: Natural Gas, No. 2 Fuel Oil*, Propane and/or Kerosene.

All boiler(s) and indirect fired process heaters registered under this General Permit are subject to the requirements of N.J.A.C. 7:27-19 Annual Adjustment of the Combustion Process.

IV. EXCLUSIONS

This General Permit cannot be used to register the following equipment:

1. A boiler or heater whose maximum rated heat input is 10 MMBTU/hr or more;
2. Emergency generators, fire pumps or any other internal combustion engine;
3. A boiler or heater burning fuel other than Natural Gas, No. 2 Fuel Oil*, Propane and/or Kerosene;
4. Direct-fired process heaters.

V. EQUIPMENT SPECIFICATIONS

The Permittee shall retain on site the following record for each boiler or heater:

The maximum rated heat input to the burning chambers of each boiler or heater, measured in millions of BTU per hour, per written manufacturer's specifications or the manufacturer's nameplate on the equipment.

***Note: No. 2 fuel oil can be a blend of up to 5% by volume bioadditives.**

VI. POTENTIAL –TO - EMIT (PTE) OPTIONS

When registering for this General Permit, the Permittee can select from only one of the following options. Option A does not have a fuel limit. For options B and C, fuel usage limits do apply.

Option A: Size Limit

The annual PTE is based on the total combined heat input rates for all boilers and heaters registered in this General Permit. The total combined maximum heat input rates must be less than 30 million BTU/hr. Boilers and/or heaters registered under this option may burn **Natural Gas, No. 2 Fuel Oil*, Propane and/or Kerosene**. A fuel limit is not required when registering under this option.

Option B: Gaseous Fuel Limit

The annual PTE is based on the maximum allowable gaseous fuel limit for each 12 consecutive month period, based on a rolling 1-month basis. The maximum annual fuel limit depends on the General Permit number selected by the Permittee and cannot exceed 400 million cubic feet. Boilers and/or heaters registered under this option may burn **Natural Gas and/or Propane**. A fuel totalizer(s) is required when registering under this option.

Option C: Liquid Fuel Limit

The annual PTE is based on the maximum allowable liquid fuel limit for each 12 consecutive month period, based on a rolling 1-month basis. The maximum annual fuel limit depends on the General Permit number selected by the Permittee and cannot exceed 2 million gallons. Boilers and/or heaters registered under this option may burn **No. 2 Fuel Oil* and/or Kerosene**. A fuel totalizer(s) is required when registering under this option.

***Note: No. 2 fuel oil can be a blend of up to 5% by volume bioadditives.**

OPTION A (SIZE LIMIT)

POTENTIALS TO EMIT (IN TONS PER YEAR) ARE ESTABLISHED BY SELECTING THE **TOTAL COMBINED** MAXIMUM RATED HEAT INPUT (MMBTU/HR) FOR ALL BOILER(S) AND / OR HEATER(S) BURNING ANY OF THE FOLLOWING FUELS:
NATURAL GAS, NO. 2 FUEL OIL*, PROPANE, AND/OR KEROSENE

General Permit Number	Total Combined Heat Input of All Boiler(s) and/or Heater(s) (MMBTU/hr)		Air Contaminant Category POTENTIAL TO EMIT (tons per year)				
			Total Suspended Particulates (TSP)	Sulfur Dioxide (SO ₂)	Oxides of Nitrogen (NO _x)	Carbon Monoxide (CO)	Volatile Organic Compounds (VOC)
	Greater Than	Less Than or Equal					
BH18-A1	1	10	1.07	9.21	6.49	3.61	0.24
BH18-A2	10	15	1.61	13.82	9.73	5.41	0.35
BH18-A3	15	20	2.14	18.43	12.98	7.21	0.47
BH18-A4	20	25	2.68	23.04	16.22	9.02	0.59
BH18-A5	25	30	3.21	27.64	19.47	10.82	0.71

OPTION B (GASEOUS FUEL LIMIT)

POTENTIALS TO EMIT (IN TONS PER YEAR) ARE ESTABLISHED BY SELECTING THE **TOTAL FUEL LIMIT** FOR ALL BOILER(S) AND / OR HEATER(S) BURNING ANY OF THE FOLLOWING FUELS: NATURAL GAS AND / OR PROPANE

General Permit Number	Total Fuel Limit (maximum standard cubic feet/year)	Air Contaminant Category POTENTIAL TO EMIT (tons per year)				
		Total Suspended Particulates (TSP)	Sulfur Dioxide (SO ₂)	Oxides of Nitrogen (NO _x)	Carbon Monoxide (CO)	Volatile Organic Compounds (VOC)
BH18-B1	25,000,000	0.10	0.01	1.25	1.05	0.07
BH18-B2	50,000,000	0.19	0.02	2.50	2.10	0.14
BH18-B3	100,000,000	0.38	0.03	5.00	4.20	0.28
BH18-B4	200,000,000	0.76	0.06	10.00	8.40	0.55
BH18-B5	300,000,000	1.14	0.09	15.00	12.60	0.83
BH18-B6	400,000,000	1.52	0.12	20.00	16.80	1.10

In order to determine compliance with the total gaseous fuel limit, any Permittee that combusts propane must convert *gallons* propane into *scf* propane, using the following formula: annual volume of propane burned (in gallons) multiplied by the factor 37.0 = equivalent volume propane (in standard cubic feet).

***Note: No. 2 fuel oil can be a blend of up to 5% by volume bioadditives.**

<p align="center">OPTION C (LIQUID FUEL LIMIT)</p> <p align="center">POTENTIALS TO EMIT (IN TONS PER YEAR) ARE ESTABLISHED BY SELECTING THE <u>TOTAL FUEL LIMIT</u> FOR ALL BOILER(S) AND / OR HEATER (S) BURNING ANY OF THE FOLLOWING FUELS: No. 2 FUEL OIL* AND/OR KEROSENE</p>						
General Permit Number	Total Fuel Limit (maximum gallons/year)	Air Contaminant Category POTENTIAL TO EMIT (tons per year)				
		Total Suspended Particulates (TSP)	Sulfur Dioxide (SO ₂)	Oxides of Nitrogen (NO _x)	Carbon Monoxide (CO)	Volatile Organic Compounds (VOC)
BH18-C1	<i>100,000</i>	<i>0.17</i>	<i>1.42</i>	<i>1.00</i>	<i>0.25</i>	<i>0.02</i>
BH18-C2	<i>500,000</i>	<i>0.83</i>	<i>7.10</i>	<i>5.00</i>	<i>1.25</i>	<i>0.09</i>
BH18-C3	<i>1,000,000</i>	<i>1.65</i>	<i>14.20</i>	<i>10.00</i>	<i>2.50</i>	<i>0.17</i>
BH18-C4	<i>1,500,000</i>	<i>2.48</i>	<i>21.30</i>	<i>15.00</i>	<i>3.75</i>	<i>0.26</i>
BH18-C5	<i>1,750,000</i>	<i>2.89</i>	<i>24.85</i>	<i>17.50</i>	<i>4.38</i>	<i>0.30</i>
BH18-C6	<i>2,000,000</i>	<i>3.30</i>	<i>28.40</i>	<i>20.00</i>	<i>5.00</i>	<i>0.34</i>

NOTE: Annual emissions listed in the Options Table above were calculated using factors from USEPA AP-42, *Fifth Edition, Volume 1, Chapter 1*.

VII. **SUBMITTAL / CONTACT INFORMATION:**

For assistance or contact information please go to one of the following resources:

1. Air Compliance and Enforcement at:
<http://www.nj.gov/dep/enforcement/air.html>
2. Small Business Assistance Program at
<http://www.nj.gov/dep/opppc/small.html>.
3. Bureau of Preconstruction Permits at:
<http://www.state.nj.us/dep/aqpp/>
4. Annual Combustion Adjustment Submittal at:
<http://www.state.nj.us/dep/aqpp/adjustment.htm>

***Note:** No. 2 fuel oil can be a blend of up to 5% by volume bioadditives.

FACILITY SPECIFIC REQUIREMENTS

Item No.	Applicable Requirement	Monitoring Requirement	Record keeping Requirement	Submittal/ Action
1.	In addition to this Compliance Plan, all conditions contained in the document "General Procedures for General Permits" shall also be subject to enforcement. [N.J.A.C 7:27-8.13(h)]	None	None	None
2.	The Permittee shall ensure combustion equipment included in this General Permit is easily identifiable by clear and conspicuous labeling, including manufacturer name, model number, serial number, and burner maximum rated heat input. [N.J.A.C. 7:27-8.13(a)]	None	None	None
3.	The Permittee shall not use the equipment in a manner which will cause visible emissions exclusive of visible condensed water vapor, except for a period no more than 3 minutes in any consecutive 30-minute period. [N.J.A.C 7:27-3.2]	None	None	If visible emissions are observed, refer to operator manual for corrective action. If measures fail to correct visible emissions within 24 hours of observation, the Permittee shall immediately report the incident to the Department by calling the Environmental Action Hotline at (877) 927-6337. [N.J.A.C. 7:27-8.13(d)]

FACILITY SPECIFIC REQUIREMENTS

Item No.	Applicable Requirement	Monitoring Requirement	Record keeping Requirement	Submittal/ Action
4.	<p>This equipment shall not cause any air contaminant, including an air contaminant detectable by the sense of smell, to be present in the outdoor atmosphere in such quantity and duration which is, or tends to be, injurious to human health or welfare, animal or plant life or property, or would unreasonably interfere with the enjoyment of life or property, except in areas over which the owner or operator has exclusive use or occupancy. [N.J.A.C 7:27-5]</p>	None	None	<p>Any operation of the equipment which may cause a release of air contaminants in a quantity or concentration which poses a potential threat to public health, welfare, or the environment or which might reasonably result in citizen complaints shall be reported by the Permittee as required by the Air Pollution Control Act. The Permittee shall immediately notify the Department of any non-compliance by calling the Environmental Action Hotline at (877) 927-6337. [N.J.S.A 26:2C-19(e)]</p>
5.	<p>Each facility may possess only one GP-018 at any time. [N.J.A.C. 7:27-8.13(a)]</p>	None	None	None

FACILITY SPECIFIC REQUIREMENTS

Item No.	Applicable Requirement	Monitoring Requirement	Record keeping Requirement	Submittal/ Action
6.	<p>The maximum allowable sulfur content in No. 2 fuel oil* and kerosene shall be less than or equal to 0.20 percent by weight.</p> <p>*Note: No. 2 fuel oil can be a blend of up to 5% by volume bioadditives.</p> <p>[N.J.A.C 7:27-8.13(a)]</p>	<p>For each fuel oil delivery received, the Permittee shall review written documentation of the delivery to ensure the maximum allowable fuel oil sulfur content is not being exceeded. Such written documentation can include but is not limited to:</p> <p>Bill of Lading, Delivery Invoice, Certificate of Analysis, etc.</p> <p>[N.J.A.C 7:27-8.13(a)]</p>	<p>Recordkeeping once initially, and upon change of material or fuel supplier. The Permittee shall keep records of fuel oil sulfur content. All records shall be maintained on site for a minimum of 5 years and shall be made readily available upon the Department's request.</p> <p>[N.J.A.C.7:27-8.13(d)3]</p>	None

FACILITY SPECIFIC REQUIREMENTS

Item No.	Applicable Requirement	Monitoring Requirement	Record keeping Requirement	Submittal/ Action
7.	<p>The Permittee shall ensure each boiler and indirect fired process heater included in this General Permit shall adjust the combustion process annually. All subsequent Adjustments shall be conducted once each calendar year, in the same quarter as the First Adjustment.</p> <p>The adjustment of the combustion process shall be done in accordance with the procedure set forth at N.J.A.C. 7:27-19.16 and the specific procedures for combustion adjustment monitoring specified in NJDEP Technical Manual 1005.</p> <p>{N.J.A.C.7:27-19.7(g)}</p>	<p>The annual combustion adjustment shall include the following:</p> <ul style="list-style-type: none"> Inspect the burner, and clean or replace any components of the burner as necessary. Inspect the flame pattern and make any adjustments to the burner necessary to optimize the flame pattern consistent with the manufacturer's specifications. Inspect the system controlling the air-to-fuel ratio, and ensure that it is correctly calibrated and functioning properly. Minimize the total emissions of NO_x and CO consistent with the manufacturer's specifications. Measure the concentrations in the effluent stream of NO_x, CO and O₂ in ppmvd, before and after the adjustment is made; and Convert the emission values of NO_x, CO and O₂ concentrations measured in lb/MMBTU according to the following formula: $\text{Lb/MMBTU} = (\text{ppmvd} * \text{MW} * \text{F dry factor} * \text{O}_2 \text{ correction factor} / 387,000,000.$ <p>Where: ppmvd is the concentration in parts per million by volume, dry basis, of NO_x or CO MW is the Molecular Weight for NO_x=46 lb/lbmole; CO= 28 lb/lbmole F Dry factor for Natural Gas = 8,710 dscf/MMBTU Fuel oil = 9,190 dscf/MMBTU O₂ correction factor: $\frac{(20.9\%)}{(20.9\% - \text{O}_2 \text{ measured})}$ O₂ measured is percent oxygen on a dry basis</p> <p>{N.J.A.C 7:27-19.16(a)}</p>	<p>The owner or operator shall maintain records of each combustion adjustment in a logbook or computer data system and retained for a minimum of five years, to be made readily accessible to the Department upon request. Such records shall contain the following information:</p> <ul style="list-style-type: none"> The dates of the adjustments and the times at which it began and ended; The name, title and affiliation of the person who made the adjustment; The NO_x and CO concentrations in the effluent stream in ppmvd, before and after the adjustment of the combustion process; The concentration of O₂ at which the CO and NO_x concentrations were measured A description of any corrective action taken; Results from any subsequent test performed after taking any corrective action, including concentrations and converted emission values in pounds per million BTU (lb/MMBTU); The type and amount of fuel used over the 12 months prior to the annual adjustment. {N.J.A.C 7:27-19.16(b)} <p>{N.J.A.C 7:27-19.16(b)}</p>	<p>Beginning 2012, electronically submit annually to the Department a report containing the following information:</p> <ul style="list-style-type: none"> The concentrations of NO_x and CO in the effluent stream in ppmvd, and O₂ in percent dry basis, measured before and after the adjustment of the combustion process The converted emission values in lb/MMBTU for the measurements taken before and after the adjustment of the combustion process; A description of any corrective actions taken as part of the combustion adjustment and; The type and amount of fuel used over the 12 months prior to the annual adjustment. <p>This report must be submitted within 45 days after each Annual Combustion Adjustment is completed, and shall be in the format specified at http://www.state.nj.us/dep/acpp/adjustment.htm</p> <p>{N.J.A.C.7:27-19.16(c)}</p>

FACILITY SPECIFIC REQUIREMENTS

Item No.	Applicable Requirement	Monitoring Requirement	Record keeping Requirement	Submittal/ Action
8.	The owner or operator of the adjusted equipment or source operation shall ensure that the operating parameter settings are established and recorded after the combustion process is adjusted and that the adjusted equipment or source operation is maintained to operate consistent with the annual adjustment. {N.J.A.C. 7:27-19.16(e)}	None	The owner or operator shall record in a logbook or computer data system the operating parameter settings after the combustion process is adjusted and retained until the next annual adjustment, to be made readily accessible to the Department upon request. {N.J.A.C. 7:27-19.16(e)}	None
9.	<u>For Option A Only</u> Compliance with the annual emission limit for each air contaminant shall be based on operation of the unit(s) at a maximum of 8760 hours per year for the size(s) registered. [N.J.A.C 7:27-8.13(a)]	None	None	None
10.	<u>For Options B or C Only</u> Compliance with the annual emission limit for each air contaminant shall be based on the annual fuel consumption. Permittee shall comply with a self-imposed fuel limit. [N.J.A.C 7:27-8.13]	Permittee shall install and operate fuel totalizer(s) to monitor the total amount of fuel burned each 12 consecutive month period, based on a rolling 1-month basis. [N.J.A.C 7:27-8.13(d)]	Each month during operation the permittee shall record: 1. Fuel type. 2. Current reading from the fuel totalizer(s). 3. Monthly fuel usage. 4. Sum and record the current monthly fuel usage with the previous eleven (11) month fuel usage totals to determine the consecutive twelve (12) month total. Records shall be made readily accessible for the Department's inspection in either a logbook or computer data system for a minimum of 5 years. [N.J.A.C 7:27-8.13]	The permittee shall notify the Department of any non-compliance with their self-imposed fuel limit within 24 hours of discovery by calling the Environmental Action Hotline at (877) 927-6337. [N.J.A.C. 7:27-8.13(d)]

